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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,312	01/14/2002	Yuko Shiratori	F-11890	6296

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EXAMINER

GARBOWSKI, LEIGH M

ART UNIT

PAPER NUMBER

2825

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/043,312

Applicant(s)

SHIRATORI, YUKO

Examiner

Leigh Marie Garbowski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☒ Claim(s) 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2 sheets.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

***Claim Objections***

Claim 21 is objected to because of the following informalities: the language reciting dependency on claim 15 is missing. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 8-9, 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kazuhiro [Japanese Publication #11-097541].

As per claim 1, Kazuhiro disclose a method comprising: calculating a current density at a branch of a net; determining whether or not said current density exceeds a limit value; revising a wiring which affects said current density in order to reduce said current density if said current density exceeds said limit value [Abstract]. As per claim 2, wherein said limit value is determined to prevent said electro-migration [Abstract].

As per claims 8-9, 15-16, Kazuhiro disclose a method as well as apparatus [Title] for implementing the method, thus the claims are rejected as similarly outlined above.

Claims 1-3, 7-10, 14-17, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Hathaway et al. [U.S. Patent #5,737,580].

As per claim 1, Hathaway et al. disclose a method comprising: calculating a current density at a branch of a net [column 5, lines 35-37]; determining whether or not said current density exceeds a limit value [column 5, lines 228-29]; revising a wiring which affects said current density in order to reduce said current density if said current density exceeds said limit value [column 7, lines 39-41]. As per claim 2, wherein said limit value is determined to prevent said electro-migration [column 4, lines 41-43]. As per claim 3, wherein said limit value depends on drive ability of a device which drives

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said net [column 2, lines 27-29; column 3, lines 13-15]. As per claim 7, further comprising tracing said net to obtain said branch [column 4, lines 31-37].

As per claims 8-10, 14-17, 21, Hathaway et al. disclose a method as well as apparatus [column 1, lines 7-8] for implementing the method, thus the claims are rejected as similarly outlined above.

Claims 1-2, 4-9, 11-16, 18-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujine et al. [U.S. Patent #6,247,162 B1].

As per claim 1, Fujine et al. disclose a method comprising: calculating a current density at a branch of a net [column 5, lines 7-10]; determining whether or not said current density exceeds a limit value [column 5, lines 11-15]; revising a wiring which affects said current density in order to reduce said current density if said current density exceeds said limit value; [column 5, line 17; column 6, lines 44-48]. As per claim 2, wherein said limit value is determined to prevent said electro-migration [column 6, line 44]. As per claim 4, wherein said limit value depends on resistance of an interval of said net, said interval ending at said branch [column 8, lines 9-25]. As per claim 5, wherein the revising said wiring is reducing resistance of an interval of said net, said interval ending at said branch [column 8, lines 9-25]. As per claim 6, wherein the reducing the resistance of said interval is widening said interval [column 8, lines 9-25]. As per claim 7, further comprising tracing said net to obtain said branch [column 9, lines 54-56].

As per claims 8-9, 11-16, 18-21, Fujine et al. disclose a method as well as apparatus [figure 1] for implementing the method, thus the claims are rejected as similarly outlined above.

Claims 1-2, 7-9, 14-16, 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakamura [U.S. Patent #6,308,310 B1].

As per claim 1, Nakamura discloses a method comprising: calculating a current density at a branch of a net [column 2, lines 33-35]; determining whether or not said current density exceeds a limit value [column 2, lines 36-37]; revising a wiring which affects said current density in order to reduce said current density if said current density exceeds said limit value [column 3, line 60-column 4, line 10]. As per claim 2, wherein

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said limit value is determined to prevent said electro-migration [column 1, lines 6-7]. As per claim 7, further comprising tracing said net to obtain said branch [column 3, lines 29-42].

As per claims 8-9, 14-16, 21, Nakamura discloses a method as well as apparatus [column 1, lines 10-11] for implementing the method, thus the claims are rejected as similarly outlined above.

Claims 1-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Itazu et al. [U.S. Patent #6,405,354 B1].

As per claim 1, Itazu et al. disclose a method comprising: calculating a current density at a branch of a net [column 7, lines 7-12]; determining whether or not said current density exceeds a limit value [column 7, lines 13-15]; revising a wiring which affects said current density in order to reduce said current density if said current density exceeds said limit value [column 7, lines 15-18]. As per claim 2, wherein said limit value is determined to prevent said electro-migration [column 1, lines 59-62]. As per claim 3, wherein said limit value depends on drive ability of a device which drives said net [column 6, lines 52-55]. As per claim 4, wherein said limit value depends on resistance of an interval of said net, said interval ending at said branch [column 6, lines 40-48]. As per claim 5, wherein the revising said wiring is reducing resistance of an interval of said net, said interval ending at said branch [column 6, lines 40-48; column 8, lines 24-28]. As per claim 6, wherein the reducing the resistance of said interval is widening said interval [column 6, lines 40-48; column 8, lines 24-28]. As per claim 7, further comprising tracing said net to obtain said branch [column 2, lines 54-56].

As per claims 8-21, Itazu et al. disclose a method as well as apparatus [figure 7] for implementing the method, thus the claims are rejected as similarly outlined above.

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Jetton et al. [U.S. Patent #6,675,139 B1].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh Marie Garbowski whose telephone number is 571-272-1893. The examiner can normally be reached on days.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LEIGH M. GARBOWSKI  
PRIMARY EXAMINER